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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,990	12/09/2003	Wade M. Mattar	12780-026001	2769

26171 7590 03/31/2005

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EXAMINER

RAEVIS, ROBERT R

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/729,990

Applicant(s)

MATTAR, WADE M.

Examiner

Robert R. Raevis

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 3-14, 18-26 and 29-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 15-17, 27, 28 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1-28-05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1,2,15,17,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al.

Wang et al teaches calculation of flow (V_o) via an equation (col. 5, lines 40-45), and employs data that is stored (col. 5, lines 57-58). Wang then discusses (col. 5, lines 37+, and continuing on to col. 6, line 7) a method to correct a flow meter reading for temperature variation, including: determining a plurality of calibration values ("constants" on col. 6, line 1) associated with the flow meter; each of the constants or which are necessarily associated with operational parameters (i.e. "no flow, and at two other flow settings", col. 6, line 6); and use of the constants with the equation (on col. 5, lines 64-65) to compensate for thermal drift (col. 5, lines 59-last) in determination of flow.

Wang does not teach storing the calibration values.

As to claims 1,15,17, it would have been obvious to store the calibration values to permit for use of those same calibration values to be employed in correcting a calculated value of output voltage (V_o) (i.e. flow) for temperature variation. Storing of the "no flow, and at two other flow setting" (col. 6, line 6) permits for knowing how to calculate the constants.

As to claim 2, note that Wang teaches that the "constants" are calculated by measuring temperature drift at "no flow" (col. 6, line 6).

As to claims 15,17,27, note that Wang employs a flow chart (Figure 8) to carry out his measurement, suggestive of use of a flow chart to includes his thermal drift corrections on col. 5, lines 59+, and continuing on to col. 6, line 6.

Claims 1,2,15-17,27,28,36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham et al in view of Wang et al.

Cunningham et al teach a method to calibrate a flow meter including: determining (col. 2, lines 15-22) the zero offset error for correction of flow measurement.

Cunningham then teaches (col. 2, lines 23-30) that changes in temperatures may cause the zero offset to drift over time, necessitating compensation for the drift.

Cunningham does not associate a calibration values (i.e. different zero values) with one of a plurality of operational parameters (i.e. a different temperature), and does not store those two values for calibration.

Wang et al teach (col. 5, lines 31+, and continuing on to col. 6, line 6) that mass flow meters may be corrected for temperature variation by a determination of drift of offset with temperature.

As to claims 1,2,15,16,17,28 and 36, it would have been obvious to correct flow meter measurements (with an equation) for temperature variations because Wang teaches that equations permit for flow meter signal correction for variation in temperatures. In addition, it is known to employ look up charts (i.e. memory) and interpolations/extrapolations as a means of determination of values in lieu of equation usage as chart usage permits for a more accurate means of determination due to the actual values employed/stored in the table.

As to claim 27, the meter, memory (for calibration values with their particular associated temperatures), and unit to provide for computation are all connected together.

Art Unit: 2856

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Horne et al calibrate a mass flow meter for temperature (col. 7, lines 53+, continuing on to col. 8, line 18).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert R. Raevis whose telephone number is 571-272-2204. The examiner can normally be reached on Monday to Friday from 7am to 4pm. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert R. Raevis

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